

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently amended)      A method for ~~attaching DNA in plasmid form to the surface of ealcium phosphate ceramic or powder~~ producing dense hydroxyapatite ceramics containing DNA molecules attached to an outer surface of the dense hydroxyapatite ceramics, said ceramics being capable of transfecting cells *in vivo* and *in vitro*,  
comprising
  - a) hydrating the ~~ealcium phosphate powder or ealcium phosphate~~ dense hydroxyapatite ceramic in a phosphate buffer solution not saturated with calcium and phosphate,
  - b) immersing the products obtained in step a) in a phosphate buffer solution not saturated with calcium and phosphate containing a single- or double-stranded DNA for periods varying from a few minutes to several hours, ~~and~~
  - c) producing ~~ealcium phosphate particles~~ dense hydroxyapatite ceramics containing the DNA molecules attached to an outer surface of the ~~particles~~ dense hydroxyapatite ceramics.
2. (Previously presented)      The method as claimed in claim 1, wherein the solution in step a) and b) comprises a 0.12 M phosphate buffer (pH 6.8).
3. (Currently amended)      The method as claimed in claim 1, wherein the immersion of step b) is carried out for at least 1, 5, 10 or 30 minutes up to about 12, 24 or 48 hours ~~at a temperature ranging from 15 to 50°C.~~
4. (Currently Amended)      The method as claimed in claim 1, wherein the ~~ealcium phosphate particles are kept immersed in a culture medium of the cell culture media type~~ immersion of step b) is carried out at a temperature ranging from 15 to 50°C.
- 5.-6. (Canceled)

7. (Currently amended) The method as claimed in claim 1, wherein step b) is carried out by means of a medium simulating extracellular fluids or a medium of the cell culture media type containing the nucleic acids, said medium being nondenaturing for the DNA and not saturated with calcium and phosphate; ~~this medium causing epitaxial carbonated apatite growth at the surface of said powders and ceramics.~~
8. (Previously presented) The method as claimed in claim 1, wherein steps a) and b) are carried out simultaneously or successively.
9. (Currently amended) The method as claimed in claim 1 ~~[[7]]~~ wherein ~~steps b) and c)~~ ~~oeeur~~ said method is carried out under physiological pH conditions.
10. (Currently Amended) A method for transfecting isolated cells, cultured in a monolayer or in three dimensions, comprising bringing the cells to be transfected into contact with the ~~particles~~ ceramics obtained by the method as claimed in claim 1 for periods of a few hours to a few weeks.
11. (Currently Amended) A method for transfecting cells contained in a cultured tissue fragment consisting in bringing the cells to be transfected into contact with the ~~particles~~ ceramics obtained by the method as claimed in claim 1 for periods of a few hours to a few weeks.
12. (Currently Amended) A method of preparing a medicament for transfecting *in vivo* cells contained in a tissue or in an organ utilizing the ~~particles~~ ceramics obtained by the method as claimed in claim 1.
13. (Withdrawn-Currently Amended) A dense hydroxyapatite ceramic obtainable by the process according to claim 1, calcium phosphate ceramic and powder which can be obtained from the method as claimed in claim 1, wherein epitaxial carbonated apatite growth at the

~~surface of the calcium phosphate ceramic and powder under nondenaturing conditions is supported having the following properties:~~

- ~~- nature of the charged groups at the surface:  $\text{PO}_4^-$ ,  $\text{OH}^-$ ,  $\text{Ca}^{++}$~~
- ~~- basic surface pH~~
- ~~- negative electrokinetic potential~~
- ~~- hydrophobic~~
- ~~- particle size between 80-125  $\mu\text{m}$ .~~

14. (Canceled)

15. (Withdrawn-Currently Amended) The ~~calcium phosphate~~ dense hydroxyapatite ceramic ~~and powder~~ as claimed in claim 13, having ~~at least one of~~ the following properties:

- nature of the charged groups at the surface:  $\text{PO}_4^-$ ,  $\text{OH}^-$ ,  $\text{Ca}^{++}$
- ~~basic~~ surface pH: 7.8
- ~~negative~~ electrokinetic potential: -35 mV
- hydrophobicity
- particle size ~~between 0-200  $\mu\text{m}$ , in particular~~ between 80-125  $\mu\text{m}$  ~~and 0-25  $\mu\text{m}$~~
- ~~specific surface area: 0.62  $\text{m}^2/\text{g}$ .~~

16. (Withdrawn-Currently Amended) The ~~calcium phosphate~~ dense hydroxyapatite ceramic ~~and powder~~ as claimed in claim 13, additionally comprising a core composed of another polymeric, ceramic or metallic, ~~preferably magnetic, material.~~

17. (Withdrawn-Currently Amended) ~~A particle formed based on the calcium phosphate powder~~ The dense hydroxyapatite ceramic as claimed in claim 13, contained in a mineral or polymeric matrix, in particular in calcium phosphate or sulfate cements.

18.-22. (Canceled)